

What is claimed is:

1. An apparatus for dynamically allocating resource in an interactive satellite multimedia system, comprising:

5 resource request amount collection means for accumulating a requested resource amount corresponding to each of terminals during a super-frame period;

10 resource request amount processing means for dividing an accumulated requested resource amount by the number of frame pairs in a super frame and storing a sum of a result of dividing and rounding up a remain of the division to a nearest integer as a request amount of each corresponding terminal; and

15 resource allocation means for deciding a time slot allocated at each of terminals corresponding to a frame pair based on optimal allocation amount, which is decided based on the request amount by the requested amount processing means.

20 2. The apparatus as recited in claim 1, wherein the resource allocation means completes a time slot allocation schedule for a first frame pair based on an optimal allocation resource amount by deciding how to allocate resource to each of terminals and the time slot allocation 25 schedule is copied for other frame pairs.

3. The apparatus as recited in claim 1, wherein the

resource allocation means includes:

resource allocation amount deciding means for deciding an amount of resource allocated to each of terminals;

5 resource allocation scheduling means for deciding terminals to be allocated of variable time slot included in a first frame pair based on the amount of resource decided by the resource allocation amount deciding means; and

10 resource allocation schedule copying means for copying an allocation schedule of time slot in the first frame pair for remained frame pairs in same super-frame.

4. The apparatus as recited in claim 3, wherein the frame pair is a subset of the super-frame, one of frame 15 pairs is a set of frames or a frame having identical time period, each of frame pairs have identical a time slot allocation type or a frequency bandwidth and different time period comparing to other frame pairs, all frame pairs in one super-frame are subsets and a union of all frame pairs 20 is the super-frame.

5. The apparatus as recited in claim 4, wherein the resource request amount processing means obtains a result computed by dividing the request resource amount of each 25 terminal by the number of frame pairs in one super-frame and rounding off a result of division to the nearest integer.

6. A method for dynamically allocating resources in an interactive satellite multimedia system, comprising the steps of:

5 a) accumulating a request amount of resource corresponding to each of terminals during a super-frame period;

10 b) dividing the accumulated request amount of resource by frame pairs included in one super frame and remembering a sum of a result of dividing and rounding off a remain of the division to a nearest integer as a resource request amount; and

15 c) deciding an optimal allocation amount based on the resource request amount and deciding a time slot to be allocated to each of terminals based on the optimal allocation amount.

7. The method as recited in claim 6, wherein in the step c), a time slot allocation schedule of a first frame pair is decided based on the optimal allocation amount by deciding the optimal allocation amount based on the resource request amount in the step b) and the time slot allocation schedule of the first frame pair is copied and used for other frame pairs.

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8. The method as recited in claim 6, wherein the step c) includes the steps of:

d) deciding how much resource is allocated to each of terminals based on the first frame pair;

e) deciding terminals to be allocated of a variable time slot included in the first frame pair base on the
5 optimal allocation amount; and

f) copying a time slot allocation schedule of the first time slot to remained frame pair in the same super frame.

10 9. The method as recited in the claim 8, wherein in the step d), the optimal allocation amount is decided according to a priority of resource request amount processed at the step b), an additional allocation amount excepting minimum allocation amount is decided by sorting
15 the resource request amounts from one having higher weight to one having lower weight and a total allocation amount is calculated by adding the additional allocation amount and the optimal allocation amount.

20 10. The method as recited in the claim 6, wherein in the step b), a result is obtained by dividing the request resource amount of each terminal by the number of frame pairs in one super-frame and rounding off a result of division to the nearest integer.

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11. A computer readable recording medium storing instructions for executing a method for actively allocation

resource in two-way satellite multimedia system, comprising functions of:

a) accumulating a request amount of resource corresponding to each of terminals during a super-frame period;

b) dividing the accumulated request amount of resource by frame pairs included in one super frame and remembering a sum of a result of dividing and rounding off a remain of the division to a nearest integer as a resource request amount; and

c) deciding an optimal allocation amount based on the resource request amount and deciding a time slot to be allocated to each of terminals based on the optimal allocation amount.

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